

REMARKS

Amendment to the Specification

Paragraph 80 has been amended to delete the attorney docket number and insert the application serial number.

Objection to the Specification

The specification was objected to because it does not describe the product of claims 42 and 43 lacking a cyclic anhydride-grafted polyolefin. (Paper 7, page 2.) As described below, claims 42 and 43 have been amended to recite the presence of the cyclic anhydride-grafted polyolefin.

Support for Claim Amendments

Claims 1 and 40-44 have been amended to include the limitation that the composition comprises a polyolefin-graft-cyclic anhydride copolymer consisting of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof. Support for these amendments may be found in paragraphs [0027] and [0051] of the specification as filed.

Claim 33 has been amended to further recite that the polyolefin is a homopolypropylene. Support for this amendment may be found, at least in claim 11 as filed.

Claims 42 and 42 have been amended to recite the presence of "about 0.1 to about 10 weight percent of a polyolefin-graft-cyclic anhydride copolymer." Support for this amendment may be found, at least, in claims 1 and 19 as filed.

Claim Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 44-47 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the art to which it pertains, or with which it was most nearly connected, to make and/or use the invention. Specifically, the specification as filed allegedly does not disclose a "reaction product" of the various materials recited in claims 44-47 and does not disclose how to make such a reaction product. Applicants respectfully traverse this rejection.

A claim is enabled for the purposes of 35 U.S.C. § 112, first paragraph if the specification teaches "those in the art to make and use the invention without undue experimentation." *In re Wands*, 858 F.2d 731, 737 (1988). Claims 42-46 are enabled because the specification teaches those skilled in the art to use the corresponding inventions without any additional experimentation. Applicants note, first, that starting material compositions giving rise to the reaction products are described in detail in paragraphs [0015] through [0078] of the specification. Applicants note, second, that articles comprising reaction products of compositions such as those in Claim 1 are expressly mentioned at paragraph [0014] of the specification as filed. Applicants further note that methods for forming such articles are taught generally at paragraphs [0079] and [0080]. Finally, applicants note that those skilled in the art will appreciate that "reaction products" refers to the possibility that one or more starting material components in the composition may chemically react during compounding and/or subsequent processing required to form an article (e.g., injection molding). For example, an amine-substituted carbon on a polyphenylene ether may undergo deamination and react with a pendant double bond of a styrene-butadiene-styrene block copolymer. Because such reaction products may be formed during processing, the processing methods described in paragraphs [0079] and [0080] and [0086] and [0087] (blending), and [0081] and [0088] (article formation) of the specification serve as methods for the preparation of reaction products. The specification therefore provides the compositions and methods necessary to form the reaction products, and no additional experimentation would be necessary for one skilled in the art to practice the inventions of Claims 44-47. Accordingly, the rejection of Claims 44-47 under 35 U.S.C. § 112, first paragraph, should be withdrawn.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 3, 13, and 33-36 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse these rejections.

The office action states that "It is not clear what a 'C alkyl or phenyl' is since this phrase is not art recognized." (Paper 7, page 3, first paragraph.) By process of elimination, Applicants infer that this comment relates to claim 3. However, the quoted passage does not appear in Claim 3. Claim 3 as electronically filed recites the limitation "wherein each Q¹ is independently C₁-C₄ alkyl or phenyl." Thus, the carbon number limitation of the alkyl group is properly set out and "phenyl" is spelled correctly. Applicants suspect that the Examiner's reading of the claim may have been adversely affected by an artifact of electronic filing. Specifically, in Applicants' own hardcopy printout of the application, the "C₁-C₄" is split between two lines, with the subscripted 1 apparently missing and only the upper half of the subscripted 4 appearing. Nevertheless, the electronic file includes claim 3 as reproduced above in the AMENDMENTS TO THE CLAIMS section, and this claim does not appear to Applicants to contain any flaw making it rejectable under 35 U.S.C. § 112, second paragraph.

Claim 13 stands rejected as unclear because it recites the term "naphthyl group including" just prior to "(B)." (Paper 7, page 3, second paragraph.) Claim 13 has been amended to delete the offending word "including."

Claim 33 stands rejected as unclear because "the ethylene/alphaolefin elastomeric copolymer" is embraced by the polyolefin of claim 1 and it is therefore unclear if the ethylene/alphaolefin elastomeric copolymer is a material in addition to the polyolefin." (Paper 7, page 3, third paragraph.) Claim 33 has been amended to further recite that the polyolefin is a homopolypropylene. Support for this amendment may be found, at least in claim 11 as filed. Given that claims 34 and 35 each depend directly from Claim 33, the polyolefin is therefore distinct from the ethylene/alphaolefin in Claims 33-35.

Claim 36 stands rejected as unclear because "the hydrogenated block copolymer referred to may embrace the block copolymer of claim 1 in that claim 1 recites a lower limit of alkenyl aromatic content of about 40% while that of claim 36 recites an upper level of 40% and thus it cannot be determined if a single hydrogenated block material could meet the limitation of claim 36 when claim 36 contained for instance 39% vinyl aromatic monomer." (Paper 7, page 3, fourth paragraph.) Claim 1 has been amended to recite the limitation that "the hydrogenated block copolymer has an alkenyl aromatic content of 40 to about 90 weight percent." The hydrogenated block copolymer of Claim 1 is therefore distinct from that of Claim 36, which is limited to "an alkenyl aromatic content of about 10 to less than 40 weight percent" (emphasis added).

Believing that they have addressed all of the Examiner's concerns, Applicants respectfully request the reconsideration and withdrawal of the rejection of Claims 3, 13, and 33-36 under 35 U.S.C. § 112, second paragraph.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1-17, 19-25, 33-39, 41, and 44 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,031,049 to Chino et al. ("Chino"). Applicants respectfully traverse this rejection.

Chino generally describes a composition comprising (A) 100 parts by weight of a component composed of (a) from 10 to 98% by weight syndiotactic polystyrene and (b) from 2 to 90% by weight of a polyolefin, (B) from 0.5 to 50 parts by weight of a block or graft styrene-olefin copolymer having a styrene content of 40 to 85% by weight, and (C) from 0.5 to 10.0 parts, relative to component (a) of (A), of a polyphenylene ether. (Chino Abstract.)

Applicants' invention relates generally to thermoplastic compositions comprising a poly(arylene ether); a poly(alkenyl aromatic) resin in an amount of at least about 10 weight percent of the total of the poly(arylene ether) and the poly(alkenyl aromatic) resin; a polyolefin; a hydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene, wherein the hydrogenated block copolymer has an alkenyl aromatic

content of 40 to about 90 weight percent; a polyolefin-graft-cyclic anhydride copolymer; and a reinforcing filler. Each of Applicants' independent claims recites the presence of the polyolefin-graft-cyclic anhydride copolymer, which consists of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766, 1767 (Fed. Cir. 1987).

The Examiner has alleged that Applicants' polyolefin-graft-cyclic anhydride copolymer is disclosed in Chino's Production Example 2 at column 13, lines 32-49 (Paper 7, page 4, third paragraph). Applicants respectfully disagree. Chino's Production Example 2 discloses the preparation of a graft copolymer having a syndiotactic polystyrene backbone and polymerized maleic anhydride grafts. This molecule does not meet the limitations of Applicants' polyolefin-graft-cyclic anhydride copolymer, which has a backbone comprising at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof. Chino therefore fails to teach the polyolefin-graft-cyclic anhydride copolymer required in each of Applicants' independent claims, and Chino cannot anticipate those claims or claims dependent therefrom. Applicants accordingly request the reconsideration and withdrawal of the rejection of claims 1-17, 19-25, 33-39, 41, and 44 under 35 U.S.C. § 102(b) over Chino.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-47 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over European Patent Application No. 412,787 A2 to Furuta et al. ("Furuta"). Applicants respectfully traverse this rejection.

Furuta generally describes compositions comprising (a) a PPE or a composition comprising a PPE, (b)(i) a propylene polymer modified by grafting with a styrene-based monomer alone or in combination with another copolymerizable monomer or (b)(ii) a

composition comprising the modified propylene polymer and a propylene polymer, and (c) a rubbery substance having chain A miscible with all or part of (a) and chain B miscible with all or part of (b). (Furuta Abstract.)

As noted above, each of Applicants' independent claims recites the presence of a polyolefin-graft-cyclic anhydride copolymer, which consists of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A 1970).

The Examiner has noted that Furuta discloses compositions comprising polystyrene-grafted polypropylene copolymers, and that the graft segments of such polymers may further comprise monomer copolymerizable with styrene, including maleic anhydride (Paper 7, paragraph bridging pages 4 and 5; Furuta, page 6, lines 13-18). However, such graft copolymers do not meet the limitations of Applicants' polyolefin-graft-cyclic anhydride copolymer. Specifically, Applicants' polyolefin-graft-cyclic anhydride copolymer consists of a polyolefin backbone and cyclic anhydride grafts. It therefore excludes other comonomers from the grafts, whereas any Furuta graft copolymer prepared from maleic anhydride as a graft comonomer further requires styrene as a graft comonomer. Furuta therefore fails to disclose Applicants' polyolefin-graft-cyclic anhydride copolymer, and a prima facie case of obviousness based on Furuta cannot be established for any of Applicants' claims.

The Examiner has noted that a Furuta example uses TR-2000 block copolymer (Paper 7, page 5, line 9), and that U.S. Patent No. 4,764,559 to Yamauchi states that TR-2000 has a styrene content of 40% (Paper 7, page 6, first paragraph). Applicants respectfully note that the composition of TR-2000 is irrelevant because Applicants'

alkenyl aromatic content limitation relates to their hydrogenated block copolymer of alkenyl aromatic compound and a conjugated diene, whereas TR-2000 is an unhydrogenated styrene-butadiene-styrene triblock copolymer (see U.S. Patent No. 4,764,559 to Yamauchi et al. at c. 8, ll. 31-33).

In view of the above remarks, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-47 under 28 U.S.C. §103(a) over Furuta.

Provisional Obviousness-Type Double Patenting Rejections

Claims 1-47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 16, 17, 25 and 35 of copending application Serial No. 09/682,926. Applicants are submitting herewith a terminal disclaimer in compliance with 37 CFR § 1.321(c) to overcome the rejection.

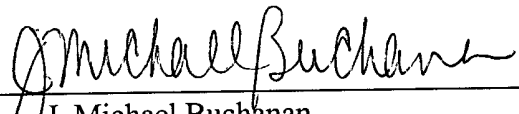
Claims 1-47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 22-25, 38, 40, and 41 of copending application Serial No. 09/682,921. Applicants are submitting herewith a terminal disclaimer in compliance with 37 CFR § 1.321(c) to overcome the rejection.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862 maintained by Assignee.

Respectfully submitted,

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